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Antiseptic Irrigation of the Knee-Joint.

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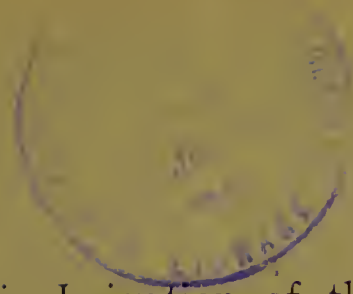
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Antiseptic Irrigation of the Knee-Joint.

IT goes I believe without saying that the curative treatment of subacute and chronic serous effusions of the knee joint, attended or non-attended by symptoms of inflammation, is often troublesome, prolonged, vexatious, and frequently disappointing. Many cases of this affection yield and temporarily appear to be cured by rest, compression, counter-irritation, and the use of absorbents, combined or non-combined with change of air.

On the other hand, when one has to endure the disappointment occasioned by the evident failure of these therapeutical measures, the resources left open or chiefly practised are the text book methods of aspiration, injection, incision and drainage. Aspiration is very unreliable, for re-accumulation of the arthritic fluid too frequently occurs; sometimes, however, it does not return, an event which I have referred to as a co-incidence rather than a consequence, a mere occurrence and not a causation. Injection of the joint with iodine, or some other weak antiseptic solution, although highly recommended, was never very largely or with much affection employed, and just now it is less advocated than formerly. I have read that suppurative inflammation of the knee joint has been induced by it. Antiseptic joint drainage has yielded good results; but as its success depends mainly upon the most rigid, careful, and painstaking adoption of a number of minute but all important details, it is frequently marred by the undesigned carelessness or forgetfulness on the part of those into whose hands the dressing of the incised joint has to be intrusted. At the best it is a severe measure, and at the worst the loss of the joint, the limb and even the life of the patient may be the consequence.

Fortunately in antiseptic irrigation we have a means of treatment which, while it is less risky, is equally efficacious and much more speedy. Compared with antiseptic drainage, it may be described (in the words of a recent writer¹) "as certainly a milder measure, attended with less danger, and one which does not require such complete acquaintance with the duties of aseptic surgery, and when successful it restores the patient to activity in a much shorter time. On many grounds the operation commends itself, and if further experience confirms the opinions which observers have given of it, a very useful addition has been acquired to the methods we already possess of successfully dealing with what is very frequently a tedious and protracted disease."

Antiseptic irrigation is of German origin, having been initiated by Schede in 1875, but up to the beginning of 1886 its capabilities were generally unknown, except to a few surgeons of the originator's nationality. In that year Dr. Weir, of New York, in a valuable paper read before the Medical Society "of that city, related several cases in which he had treated with the best result chronic affections of the knee joint by antiseptic irrigation," and it was after reading Dr. Weir's great success that I determined to give this particular method of treatment a trial.

In the following case I at first followed definitely and precisely Dr. Weir's instructions; but in consequence of a drawback, which I was not prepared for, only partial success was at first achieved; but on repeating the operation, with a modification I shall presently mention, a complete and permanent cure was rapidly obtained.

Mark Jones, twenty-five, single, by occupation an engine-driver, was admitted into the Wolverhampton and Staffordshire General Hospital in June, 1887, in consequence of chronic serous effusion into both knee joints, but especially of the left. The measurements of this joint were as follows: circumferentially, three inches above upper edge of patella, $17\frac{1}{2}$ inches; over the patella $14\frac{1}{2}$ inches; and below the patella, $12\frac{1}{2}$ inches. The joint bulged in all directions, especially on the inner side, the distension extending upwards to $6\frac{3}{4}$ inches from the top of the patella.

¹ *The Lancet*, vol. i., 1886, page 597.

On June 27th, the joint was aspirated, and after thirty ounces of synovial fluid had been evacuated, an india rubber bandage was applied and the limb completely fixed with splints. The joint having refilled and the limb being thoroughly cleaned by scrubbing with soap and water and antiseptic ablutions, under chloroform and with the spray, the following operation was performed:—A medium sized trocar and cannula (diameter of latter $\frac{3}{16}$ of an inch) was plunged into the joint on the other hand, and after its contents, viz., twenty ounces of synovial fluid, had been evacuated,¹ the interior was irrigated by a 5 per cent. solution of carbolic acid in distilled water, but in consequence of an albuminous precipitation taking place from the contact of the two fluids the cannula soon became choked with large masses, and in spite of every effort to expel these a number of flaky lumps were left in the joint. A Listerian dressing was applied, and the limb fixed with splints. For two or three days after the operation an ice bag was kept over the joint, but there was no occasion for its use, for the sequential pain was little and the pyrexia nil. A slight attack of carboluria was noticed the day following the operation.

July 14th.—The dressings were removed and the circumferential measurements of the joint above, over, and below the patella were 17, 15, and 14 inches, and comparing these with the previous measurements it became at once evident that the operation had practically failed. With the consent of the patient I determined to repeat the operation, but varying the process as follows:—

July 23rd.—Chloroform. A larger trocar and cannula (the diameter of latter was $\frac{5}{16}$ of an inch) was pushed into the joint on its other side, and twenty-two ounces of coffee-coloured fluid were removed, containing a large amount of precipitated albumen in flakes of a reddish colour. The joint was then *washed out with distilled water until it flowed away perfectly clear, and apparently quite free from*

¹ For the purpose of irrigation I use a can made of tin and holding about a pint, having near the bottom a stop cock tap, to the free end of which an india rubber tube is fitted, having at the other extremity a pointed nozzle, also furnished with a tap. The can is filled, and after being suspended three or four feet above the patient, the nozzle is inserted, either into the wound, drainage tube, or cannula, the taps turned on and the process of irrigation which ensues is equable, non-jerky and not too forcible.

admixture with synovial fluid. The joint was now irrigated with a 5 per cent. solution of carbolic acid in distilled water, the quantity used being nearly a pint. The cannula having been withdrawn, the joint was enveloped in Listerian dressings, and the limb fixed upon a splint.

August 6th.—The dressings were removed, and the measurements above, over, and below the patella were 13, 13 $\frac{1}{4}$, and 12 inches. A most careful examination was made of the joint, with the result that it was declared perfectly free from fluid. Hand friction and passive motion were daily used, and on August 24th the patient was discharged perfectly cured, and has continued so.

May 30th, 1889.—The man was visited at his residence, and the cure of the joint was ascertained, both by inspection and palpation, to be permanent.

